



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/672,069	09/28/2000	Yukihisa Takeuchi	789_048 NP	7280

25191 7590 04/02/2002

BURR & BROWN  
PO BOX 7068  
SYRACUSE, NY 13261-7068

EXAMINER

BUDD, MARK OSBORNE

ART UNIT PAPER NUMBER

2834

DATE MAILED: 04/02/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
6720 69

Applicant(s)

Takeuchi et al

Examiner

M. Budd

Group Art Unit

2834

--The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address--

## Period for Response

A SHORTENED STATUTORY PERIOD FOR RESPONSE IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a response be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for response specified above is less than thirty (30) days, a response within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for response is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to respond within the set or extended period for response will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

## Status

- ☒ Responsive to communication(s) filed on 2-21-02
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- ☒ Claim(s) 1-67 is/are pending in the application.
- Of the above claim(s) 42-67 is/are withdrawn from consideration.
- ☒ Claim(s) 14-41 is/are allowed.
- ☒ Claim(s) 1-13 is/are rejected.
- ☐ Claim(s) is/are objected to.
- ☐ Claim(s) are subject to restriction or election requirement.

## Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been received.
- ☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_
- ☐ received in this national stage application from the International Bureau (PCT Rule 1.7.2(a)).

\*Certified copies not received: \_\_\_\_\_

## Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_
- ☒ Notice of References Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other \_\_\_\_\_

Office Action Summary

Art Unit: 2834

Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claim is vague and indefinite in that an "underlying" layer would be underneath the electrostrictive element i.e. between the electrostrictive element and the thin plate not on a surface opposed (opposite) to the thin plate thus the claim appears to contradict itself and its metes and bounds cannot be determined.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1-5, 7 and 9 are rejected under 35 U.S.C. 102(a) as being anticipated by Ogawa (figs. 2, 3, 8 & 9), Kolm (fig. 1), Riedel or Okawa (figs. 4 & 5)..

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kolm, Riedel or Okawa.

Art Unit: 2834

The references teach all the structural elements but don't specify a particular bond thickness between the metal thin film and the electrostrictive element. However optimizing a device for a particular application e.g. thus routine experimentation has long been held to be within the skill expected of the routineer. Thus selection of specific optimum dimensions would have been obvious to one of ordinary skill in the art.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arai in view of Kolm, Riedel or Okawa.

Arai teaches the claimed device structure but only use a single electrostrictive layer. However, each of Riedel, Okawa or Kolm teach using multiple layers in lieu of a single layer to obtain greater displacement (or conversely greater generated voltage). Thus, for at least this reason it would have been obvious to one of ordinary skill in the art to use multiple layers of piezo elements in Arai.

Claims 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brunnee or Arai in view of Okawa, Riedel or Kolm.

Brunnee and Arai teach the claimed structural elements but provide only a single layer of piezoelectric material. For the reasons set forth in the previous paragraph it would have been obvious to one of ordinary skill in the art to use multiple piezoelectric layers with either Arai or Brunnee.

Claims 14-41 are allowed.

Further cited of interest are Hirota, Fukuda and Hasegawa.

Serial Number: 09/672,069

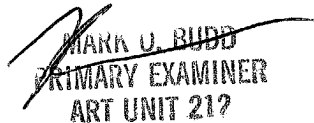
Page 4

Art Unit: 2834

Applicants general traversal of the restriction requirement is noted. However, applicant has not pointed out any error in the requirement. Further, the search areas for Group I and Group II are not the same. Thus, the requirement is hereby repeated and made final.

Budd/ds

03/30/02

  
MARK U. BUDD  
PRIMARY EXAMINER  
ART UNIT 217